

Foreword



National
Oceanic and
Atmospheric
Administration



U.S.
DEPARTMENT
OF
COMMERCE

NOAA Fisheries Service Northeast Cooperative Research Partners Program

The National Marine Fisheries Service (NOAA Fisheries Service), Northeast Cooperative Research Partners Program (NCRPP) was initiated in 1999. The goals of this program are to enhance the data upon which fishery management decisions are made as well as to improve communication and collaboration among commercial fishery participants, scientists and fishery managers. NOAA Fisheries Service works in close collaboration with the New England Fishery Management Council's Research Steering Committee to set research priorities to meet management information needs.

Fishery management is, by nature, a multiple year endeavor which requires a time series of fishery dependent and independent information. Additionally, there are needs for immediate short-term biological, oceanographic, social, economic and habitat information to help resolve fishery management issues. Thus, the program established two avenues to pursue cooperative research through longer and short-term projects. First, short-term research projects are funded annually through competitive contracts. Second, three longer-term collaborative research projects were developed. These projects include: 1) a pilot study fleet (fishery dependent data); 2) a pilot industry based survey (fishery independent data); and 3) groundfish tagging (stock structure, movements and mixing, and biological data).

First, a number of short-term research projects have been developed to work primarily on commercial fishing gear modifications, improve selectivity of catch on directed species, reduce bycatch, and study habitat reactions to mobile and fixed fishing gear.

Second, two cooperative research fleets have been established to collect detailed fishery dependent and independent information from commercial fishing vessels. The original concept, developed by the Canadians, referred to these as "sentinel fleets". In the New England groundfish setting it is more appropriate to consider two industry research fleets. A pilot industry-based survey fleet (fishery independent) and a pilot commercial study fleet (fishery dependent) have been developed.

Additionally, extensive tagging programs are being conducted on a number of groundfish species to collect information on migrations and movements of fish, identify localized or subregional stocks, and collect biological and demographic information on these species.

For further information on the Cooperative Research Partners Programs please contact:

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I. ABSTRACT

Otter trawling has been shown to disrupt benthic community structure by reducing biodiversity and abundance levels of epifaunal and infaunal species. Such reductions in the abundances of benthic inhabitants has raised concerns in the scientific, management, and fishing communities because many commercially valuable groundfish species depend on benthic habitats of various substrate types for food resources and to avoid predation. However, the long-term ecological consequences of direct disturbance to benthic habitats on ecosystem resilience and function have proven difficult to predict.

Within the last decade, marine protected areas (MPA) have been designated in the Gulf of Maine to address concerns of declining groundfish stocks, with the hope that benthic communities affected by groundfish trawling may also recover in such areas as well. One such MPA, the Western Gulf of Maine Closure (WGOMC), encompasses two regions that, as of 2004, had been closed to groundfish trawling for 6 and 4 years, respectively. In this project, changes in benthic community composition following the cessation of trawling were investigated by comparing community states of sites in the 4 and 6 year regions of the WGOMC to sites in an actively trawled fishing ground known as the Kettle. The epifaunal and infaunal components of benthic communities were surveyed via remotely operated vehicle (ROV) and sediment grab sampling in sites of comparable depth and substrate each August from 2002 through 2004. Multivariate statistics were then used to analyze differences in benthic community composition within and between sites. Finally, family life history information for resident taxa was used to determine possible mechanisms driving observed differences between benthic community composition.